

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	8	((("3802570") or ("4455220") or ("4692311") or ("4502947") or ("4741883") or ("4778488") or ("5569435") or ("5869008")).PN.	USPAT; USOCR	OR	OFF	2007/04/17 13:20
S2	2297	208/113,150,161.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/08/18 18:01
S3	3126	422/139,144,145,147.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/17 13:21
S4	16	("4455220"   "4664888"   "4666675"   "4692235"   "4692311"   "4693808"   "4731228"   "4797038"   "4797262"   "4895636"   "4961863"   "5158669"   "5248408"   "5259855").PN. OR ("5869008").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/04/17 13:46
S5	27	("2722476"   "2849079"   "2929774"   "3261776"   "3607129"   "3802570"   "4005998"   "4043899"   "4176083"   "4212653"   "4295961"   "4350510"   "4455220").PN. OR ("4692311").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/04/17 14:22
S6	11	("1818905"   "4439306"   "4455220"   "4477339"   "4516989"   "4671806").PN. OR ("4778488").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/04/17 14:26
S7	585	catalyst.ab. and cracking.ab. and stripping.ab.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:45
S8	3126	422/139,144,145,147.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/17 16:13
S9	54	S7 and S8	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:38

## EAST Search History

S10	2297	208/113,150,161.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/17 16:32
S11	76	S7 and S10	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/17 16:32
S12	472	catalyst.ab. and cracking.ab. and stripping.ab.	EPO; JPO; DERWENT	OR	ON	2007/04/17 16:47
S13	43292	cyclone or vortex	EPO; JPO; DERWENT	OR	ON	2007/04/17 16:47
S14	103	S12 and S13	EPO; JPO; DERWENT	OR	ON	2007/04/17 16:47
S15	26	("3802570"   "4005998"   "4043899"   "4173527").PN. OR ("4455220").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/04/17 17:09
S16	1	("5314611").PN.	USPAT; USOCR	OR	OFF	2007/04/17 17:09
S17	1	("5316662").PN.	USPAT; USOCR	OR	OFF	2007/04/17 17:10
S18	2	Conversion.ti. stacked.ti. FCC.ti.	US-PGPUB; USPAT; USOCR	AND	ON	2007/04/17 17:13
S19	1	("5,449,498").PN.	USPAT; USOCR	OR	OFF	2007/04/17 17:14
S20	1	("5,531,884").PN.	USPAT; USOCR	OR	OFF	2007/04/17 17:14
S21	103	niccum.in. or (iwan.in. and chan.in.) or (richard.in. and "miller.in") or tragesser.in.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:28
S22	9752	catalyst and cyclone	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:29
S23	8	S21 and S22	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 16:54

## EAST Search History

S24	13287	(expansion adj joint)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:38
S25	585	catalyst.ab. and cracking.ab. and stripping.ab.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:39
S26	3126	422/139,144,145,147.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:39
S27	54	S25 and S26	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:39
S28	5	S24 and S27	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:39
S29	6	S24 and S25	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 09:48
S30	1	("5843377").PN.	USPAT; USOCR	OR	OFF	2007/04/18 09:48
S31	1	CA-2250197-\$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2007/04/18 16:54
S32	1	("7108138").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/08/18 18:29
S33	43110	"55"/\$.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/08/18 19:30
S34	40	diameter with (chang\$4 or differ\$4 or larger or smaller or increas\$4 or decrease\$4) with (enhance or induce or aid) with vortex	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 19:31

## EAST Search History

S35	0	ratio with diameter with (enhance or induce or aid) with vortex with cyclone	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 18:45
S36	5	diameter with (enhance or induce or aid) with vortex with cyclone	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 18:51
S37	1	("5318691").PN.	USPAT; USOCR	OR	OFF	2007/08/18 18:56
S38	1	("20040031728").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/08/18 19:06
S39	1	("4719014").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/08/18 19:09
S40	2	change\$3 with diameter with (induce or enhance) with vortex	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 19:10
S41	48	diameter with (induce or enhance) with vortex	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 19:10
S42	74860	"209"/\$.ccls.	US-PGPUB; USPAT; USOCR	OR	OFF	2007/08/18 19:30
S43	9	S34 and S42	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/18 19:31